An Account of some organic Remains found near Brentford, Middlesex. By the late Mr. William Kirby Trimmer. *Communicated in a Letter from Mr.* James R. Trimmer *to the Right Hon. Sir* Joseph Banks, *Bart. K.B. P.R.S.* Read March 4, 1813. [*Phil. Trans.* 1813, *p.* 131.]

The greatest part of this account had, in fact, been drawn up by Mr. William Kirby Trimmer himself, for the purpose of communicating it, through the President, to the Society; so that very little has been added to what he had written, excepting the descriptive explanation of some sketches of several bones and teeth that accompany the paper.

The specimens had been collected at different times from two fields at some distance from each other, that have been dug for the purpose of making bricks. The first of these fields is about half a mile north of the Thames at Kew Bridge, and its surface about twenty-five feet above low water-mark. The first six or seven feet are sandy loam, rather calcareous towards the bottom, but containing no organic remains. The next stratum is sandy gravel, a few inches thick, containing shells of snails and of fresh-water fish, and a few bones of land animals. Under this is loam of variable thickness, from one to five feet, containing horns, bones, and teeth of oxen and of deer, with some shells also of snails and of fresh-water fish. The fourth stratum is gravel, from two to ten feet in thickness, covered at its surface with occasional thin patches of peat, and always thickest at those parts, and inhaling a disagreeable muddy odour. In this stratum were found teeth and bones of both the African and Asiatic elephant, of the hippopotamus, with bones, horns, and teeth of oxen. One tusk of an elephant measured as much as nine feet three inches, but was broken into small pieces in attempting to remove it. The fifth and main stratum, which follows, is the same blue clay which passes under London and its vicinity to the depth of two hundred feet and more.

This contains many detached nodules of pyrites, principally at the depth of about twenty feet from its surface, and many of them of considerable size. The extraneous fossils in this stratum are entirely marine, with the exception of some fruits and pieces of wood, which, however, appear to have been in the sea, as they are always pierced with Teredines. The shells are those of Nautili, Oysters, Pinnæ marinæ, and Crabs, with a great variety of smaller shells, and some teeth and bones of fish.

The second field mentioned by Mr. Trimmer is about a mile to the westward of the former, and at the distance of a mile from the Thames, from which it is elevated about forty feet. The first stratum here is sandy loam, to the depth of eight or nine feet, without any appearance of organic remains. Next lies sand, varying in depth from three to eight feet, and in coarseness from fine sand to sandy gravel at its lowest part. In this coarsest part are found a considerable quantity of teeth and bones of the hippopotamus and of the elephant; horns, bones, and teeth of deer and of oxen; with shells of river fish. The

remains of the hippopotamus, in particular, are so frequent, that in an area of 120 square yards, as many as six tusks of that animal were found along with various others of the bones, tusks, and horns that have been mentioned.

One horn of an ox measured as much as four feet six inches in length, and five inches in diameter at the base; and the size of this, it is observed, is the more remarkable, as another horn of an ox was found near it, only six inches long; but it is added, that they all appear to have been deposited as mere bones without the flesh; for in no instance have two bones that are connected in the living animal been found together. Although these bones have lost their cohesion, as if perished by lying long in a moist stratum, they do not seem worn in any degree, as would have happened if they had been washed by the sea for any length of time.

The third stratum in this field is sandy loam, highly calcareous, containing horns, bones, and teeth of deer and oxen, with snail-shells, and shells of river fish.

Below this stratum follow the gravel and clay corresponding to those of the other field; but as the existence of these has been ascertained solely in digging for water, it is not known, by actual examination, whether the organic remains which they may contain are of the same kinds.

On a new Construction of a Condenser and Air-pump. By the Rev. Gilbert Austin. *In a Letter to Sir* Humphry Davy, *LL.D. F.R.S.* Read March 11, 1813. [*Phil. Trans.* 1813, *p.* 138.]

Mr. Austin's object in constructing this apparatus was to impregnate fluids with any condensible gas by the aid of compression; and for the sake of preserving them in a state of purity, every part was made, as far as possible, of glass. The retort, in which the air is formed; the reservoir, in which the supply is contained; the straight tube, through which it is conveyed, and which serves as a piston; the cylinder and barrel of the pump; the receiver, containing the fluid to be impregnated; and the valves that confine it,—are all made of glass, the only exception being the stuffing of the piston, for which he names various soft materials that may be advantageously employed.

For the sake of greater simplicity in the construction, all the parts are arranged in the same vertical line. The reservoir at bottom, in which the air is first collected, is a large bell, with a perforation at the top, where it is connected with the glass rod, which serves as a piston. These are firmly fixed in position; for in this instrument, the condensation is effected by moving the barrel upon the piston, instead of having a fixed barrel with a moveable piston. Accordingly, the receiver, which is attached to the upper extremity of the glass barrel, is carried up and down with it in effecting the condensation.

The great impediment to forming pneumatic instruments of glass